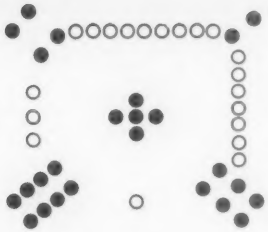
Graphs and Combinatorics



Volume 5 1989

Editor-in-Chief: Hoon Heng Teh, Singapore

Managing Editor: Jin Akiyama, Tokyo

Co-Managing Editors: Yoshimi Egawa, Tokyo
Hikoe Enomoto, Tokyo

Consulting Editors:
C. Berge, Paris
B. Bollobás, Cambridge
P. Erdös, Budapest
P. Frankl, Paris
R.L. Graham, Murray Hill
F. Harary, Las Cruces
S. Hitotumatu, Kyoto
C.L. Liu, Urbana-Champaign
R. Rado, Reading
W.T. Tutte, Waterloo

Editors:
N. Alon, Tel Aviv
E. Bannai, Columbus
Z. Füredi, Budapest
M.G. Guan, Jinan
M. Kano, Akashi
K.M. Koh, Singapore
C.K. Lim, Kuala Lumpur
V. Rödl, Prague
M.J. Ruiz, Manila
Y. Wang, Beijing
W.D. Wei, Sichuan
H.P. Yap, Singapore

Springer International

Copyright
Submission of a manuscript implies that the work described has not been published before (except in the form of an abstract or as part of a published lecture, review, or thesis), that it is not under consideration for publication elsewhere, that its publication has been approved by all the authors and by the responsible authorities – tacitly or explicitly – in the institutes where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in either the same or another language, without the consent of the copyright holders. By submitting a manuscript, the authors agree that the copyright for their article is transferred to the publisher if and when the article is accepted for publication. The copyright covers the exclusive rights to reproduce and distribute the article, including reprints, photographic reproductions, microform, electronic data base, video disks, or any other reproductions of similar nature, and translations.
Photographic reproduction, microform, electronic data base, video disks, or any other reproduction of text, figures, or tables from this journal is prohibited without permission obtained from the publisher.
The use of general descriptive names, trade names, trade marks, etc., in this publication, even if the former are not specifically identified, is not to be interpreted that such names are exempt from the relevant protective laws and regulations.
While the advice and information in this journal is believed to be true and accurate at the date of going to press, neither the authors nor the editors nor the publisher can accept any legal responsibility for any errors or omissions that may be made. The publisher makes no warranty, express or implied, with respect to the material contained herein.

Special regulations for the USA
Photocopies may be made for personal or internal use beyond that permitted by Section 107 or 108 of the U.S. Copyright Law, provided a fee is paid. This fee is $0.20 per page or a minimum of $1.00 if an article consists of less than five pages. Please pay this fee to the Copyright Clearance Center, Inc., 21 Congress Street, Salem, MA 01970, USA, stating the ISSN 0911-0119, volume, and first and last page numbers of each article copied.
The copyright owner's consent does not extend to copying for general distribution, for promotion, for creating new works, or for resale. Specific written permission must be obtained from the publisher for such copying.

Other regulations
Authors of this journal can benefit from library and photocopy fees collected by VG WORT if certain conditions are met. Authors of German nationality or resident in the Federal Republic of Germany or Berlin (West), or citizens of Austria, Switzerland or the member countries of the European Community may apply to Verwertungsgesellschaft WORT, Abteilung Wissenschaft, Goethestraße 49, D-8000 München 2, for detailed information.

Typesetter Asco Trade Typesetting Ltd., Hong Kong
Printer Sanshodo Printing, Tokyo
© Springer-Verlag Tokyo 1989
Printed in Japan

Contents

Alles, P., Poljak, S.: Long Induced Paths and Cycles in Kneser Graphs ... 303

Alon, N., Caro, Y., Tuza, Z.: Sub-Ramsey Numbers for Arithmetic Progressions ... 307

Alon, N., Füredi, Z.: Legitimate Colorings of Projective Planes ... 95

Alspach, B., Liu, G.: Paths and Cycles in Matroid Base Graphs ... 207

Bermond, J.-C., Homobono, N., Peyrat, C.: Large Fault-Tolerant Interconnection Networks ... 107

Burling, J., Heinrich, K.: Near 2-Factorizations of $2K_n$: Cycles of Even Length ... 213

Chartrand, G., Oellermann, O.R., Saba, F., Zou, H.B.: Greatest Common Subgraphs with Specified Properties ... 1

Chu, W.: A Partition Identity of Binomial Coefficients and Its Applications ... 197

Colbourn, C.J., Pulleyblank, W.R., Rosa, A.: Hybrid Triple Systems and Cubic Feedback Sets ... 15

Conway, J.H., Sloane, N.J.A., Wilks, A.R.: Gray Codes for Reflection Groups ... 315

Cozzens, M.B., Roberts, F.S.: On Dimensional Properties of Graphs ... 29

de Launey, W.: GBRD's: Some New Constructions for Difference Matrices, Generalised Hadamard Matrices and Balanced Generalised Weighing Matrices ... 125

Engel, K., Erdös, P.L.: Sperner Families Satisfying Additional Conditions and Their Convex Hulls ... 47

Füredi, Z., Griggs, J.R., Kleitman, D.J.: A Minimal Cutset of the Boolean Lattice with Almost All Members ... 327

Godsil, C.D., Imrich, W., Seifter, N., Watkins, M.E., Woess, W.: A Note on Bounded Automorphisms of Infinite Graphs ... 333

Granville, A., Moisiadis, A., Rees, R.: On Complementary Decompositions of the Complete Graph ... 57

Hamada, N.: Characterization of $\{(q+1)+2,\ 1;\ t,\ q\}$-min·hypers and $\{2(q+1)+2, 2; 2, q\}$-min·hypers in a Finite Projective Geometry ... 63

Hamada, N.: Characterization of $\{\nu_{\mu+1}+2\nu_\mu, \nu_\mu+2\nu_{\mu-1}; t, q\}$-minihypers and Its Applications to Error-Correcting Codes 137

Hayward, R., Hoàng, C., Maffray, F.: Optimizing Weakly Triangulated Graphs 339

Hertz, A.: Slim Graphs 149

Hilano, T.: Distance Degrees of Vertex-Transitive Graphs 223

Hoàng, C.T., Maffray, F.: Opposition Graphs Are Strict Quasi-Parity Graphs 83

Hoggar, S.G.: Tight 4 and 5-Designs in Projective Spaces 87

Ito, N.: On Spectra of Doubly Regular Asymmetric Digraphs of *RH*-Type 229

Kimura, H.: New Hadamard Matrix of Order 24 235

Kobayashi, M.: On Perfect One-Factorization of the Complete Graph K_{2p} 351

Kobayashi, M., Awoki, H., Nakazaki, Y., Nakamura, G.: A Perfect One-Factorization of K_{36} 243

Ma, S.L.: Schur Rings and Cyclic Association Schemes of Class Three ... 355

Matsumoto, M., Tokushige, N.: A Generalization of the Katona Theorem for Cross t-intersecting Families 159

Milner, E.C., Woodrow, R.E.: On Directed Graphs with an Independent Covering Set 363

Nakamura, M.: A Note on Binary Fundamental Transversal Matroids ... 371

Peng, Y.H., Chen, C.C., Koh, K.M.: On the Factor-Thickness of Regular Graphs 173

Shee, S.-C.: Some Extensions of a Hypergraph 189

Seberry, J.: *SBIBD* $(4k^2, 2k^2+k, k^2+k)$ and Hadamard Matrices of Order $4k^2$ with Maximal Excess Are Equivalent 373

Tay, T.-S.: Linking $(n-2)$-Dimensional Panels in n-Space II: $(n-2, 2)$-Frameworks and Body and Hinge Structures 245

Ushio, K., Tsuruno, R.: P_3-Factorization of Complete Multipartite Graphs 385

Yamasaki, Y.: Shannon Switching Games Without Terminals II 275

Zhu, Y., Li, H., Deng, X.: Implicit-degrees and Circumferences 283

Win, S.: On a Connection Between the Existence of k-Trees and the Toughness of a Graph 201